

Suggested modifications to ASTM standard methods when testing arid, saline soils

Al-Amoudi, O.S.B., Abduljawwad, S.N.

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Abstract: Arid, saline soils are residual in nature, highly cemented, and formed in hot, arid environments. The presence of soluble and insoluble salts affects the geotechnical properties of these soils. Techniques used to determine the properties of these soils should take into consideration the presence of diagenetic minerals that are considered part of these soils. In this investigation, a typical arid, saline, evaporitic soil, known locally as sabkha, was tested to determine its grain-size characteristics, hydraulic conductivity, compressibility, and collapse potential using standard ASTM methods and nonstandard techniques. The presence of soluble salts necessitates modifications to these standard test methods to properly assess the properties of these soils.